

Quiz (1)

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Time duration: 10 minutes

Q1] Divide:

1110010 by 1001

4

$$\begin{array}{r}
 1100 \overline{) 1110010} \\
 \underline{1001} \phantom{00} \\
 1010 \phantom{00} \\
 \underline{1001} \phantom{00} \\
 1100 \phantom{00} \\
 \underline{1001} \phantom{00} \\
 1100 \phantom{00} \\
 \underline{1001} \phantom{00} \\
 11
 \end{array}$$

Q2] Convert  $(63)_{10}$  to binary.

2

$$\begin{array}{ccccccc}
 64 & 32 & 16 & 8 & 4 & 2 & 1 \\
 \hline
 & & & & & & \\
 1 & 1 & 1 & 1 & 1 & 1 & 1
 \end{array}$$

$$(63)_{10} = (111111)_2$$

Q3] add in 2's complement, use a word length of 6 bits including sign and indicate if over flow occur:

1]  $(-25) + 18 = -7$

2]  $21 + 11 =$

$$(-25)_{10} = \begin{bmatrix} 1 & 1 & 1 & 0 & 0 & 1 \end{bmatrix}$$

$$(+18)_{10} = \begin{bmatrix} 0 & 1 & 0 & 0 & 1 & 0 \end{bmatrix}$$

$$(+11)_{10} = \begin{bmatrix} 0 & 0 & 1 & 0 & 1 & 1 \end{bmatrix}$$

$$(+21)_{10} = \begin{bmatrix} 0 & 1 & 0 & 1 & 0 & 1 \end{bmatrix}$$

$$(-25)_{10} = (100111)_{2's \text{ comp}}$$

1]  $100111$

+  $010010$

$$\begin{array}{r} 111001 \\ \hline 111001 \end{array} \text{ 2's}$$

$$(100111) \text{ Sign-Mag.}$$

-7 No overflow

2]  $001011$  correct answer.

$$\begin{array}{r}
 1111 \\
 001011 \\
 \hline
 + 010101 \\
 \hline
 100000
 \end{array}$$

Not correct  
overflow